

WATER LINES

NEWS FROM THE WATER RESOURCES DIVISION
OF THE MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

WATER NEWS

COAL BED METHANE: POWDER RIVER BASIN CONTROLLED GROUNDWATER AREA

By Russ Levens, DNRC

Methane gas that is trapped in coal seams beneath the Powder River Basin and other areas of Montana may be an important, untapped source of clean-burning energy. The potential for adverse impacts to the natural and human environment as a result of extracting methane from coal seams could be significant, however. To address the potential impacts to existing water users in the Powder River Basin, the Montana Department of Natural Resources and Conservation (DNRC) created the Powder River Basin Controlled Groundwater Area (PRBCGA) on December 15, 1999.

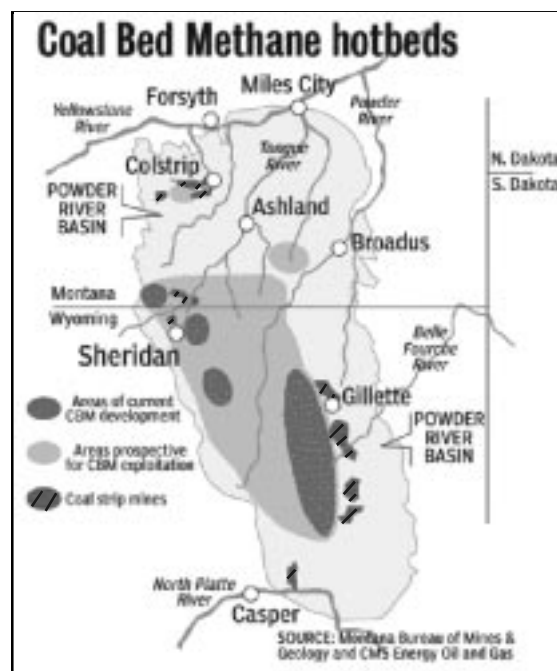
The primary component of the natural gas that heats many of our homes, methane gas, historically has come from "conventional" natural gas deposits in sandstone or other underground reservoirs. Conventional natural gas reservoirs occur where relatively permeable geologic formations are sealed by overlying rock,

allowing natural gas released from black shale or even coal ("source rock") to accumulate in the permeable geologic formations ("reservoir rock"). Conventional natural gas reservoirs overlie, and are separate from, water and/or oil. Natural gas flows to the surface under the confining pressure of the reservoir when a well penetrates a conventional natural gas reservoir. Initially, natural gas is produced by itself, but eventually, as the reservoir is depleted, oil or water also is produced.

Coal bed methane (CBM) reservoirs are fundamentally different from conventional natural gas reservoirs. Methane formed during the conversion of organic matter to coal can be retained and trapped by water pressure within the pore structure and fractures of coal. Under these conditions, the source rock and the reservoir

rock are the same, and there is no clear separation of gas and water as is found in conventional natural gas reservoirs. Water must be pumped from CBM reservoirs to reduce water pressure before methane can be produced. Eventually, the amount of water pumped declines, and methane flows to

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DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION — WATER RESOURCES DIVISION

"To provide the most benefit, through the best use, of the state's water resources for the people of Montana."

ARTHUR R. "BUD" CLINCH

Director, DNRC

406-444-2074

JACK STULTS

Administrator, Water Resources Division

406-444-6605

CURT MARTIN

Chief, Water Rights Bureau

406-444-6631

GLEN McDONALD

Chief, State Water Projects Bureau

406-444-6653

RICH MOY

Chief, Water Management Bureau

406-444-6633

LAURENCE SIROKY

Chief, Water Operations Bureau

406-444-6816

CINDY FORGEY

Editor, Water Lines

406-444-6603

DEVRI ROUBIDOUX

Graphic Design Specialist

406-444-6637

Persons with disabilities who need an alternative, accessible format of this document should contact:

DNRC, 48 North Last Chance Gulch, P.O. Box 201601, Helena, MT 59620-1601 • Phone: 406-444-6601/Fax: 406-444-0533/TDD: 406-444-6873
<http://www.dnrc.state.mt.us/wrd/home.htm>

WHERE ON EARTH IS MY WATER RIGHT?

- WATER RIGHTS, GIS, AND THE WORLDWIDE WEB -

By Mike McLane, DNRC

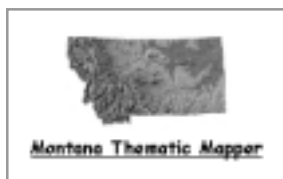
Your home computer can now access Montana's statewide water rights data in a near real-time Geographic Information System (GIS) format. We hope the public finds this tool easy to use, informative, and very convenient. DNRC sees this tool as a significant improvement in meeting citizen needs.

Montana's centralized, statewide water right records are now a subset of the Montana Interactive Applications website found at <http://nris.state.mt.us/interactive.html>. The Montana DNRC Water Rights site was activated in December. Water rights data are accessible via two different access tools – Montana DNRC Water Rights and Montana Thematic Mapper. Water rights data provided are not “real time.” That is a hoped-for future product. Currently, the information presented is as it existed in DNRC's database as of July 2001. Updates will be made periodically.

This online web services are hosted and managed by the Montana State Library's Natural Resource Information System (NRIS). NRIS provides the hardware and software that drive the Interactive Applications web. Resource agencies, like DNRC, provide improved public access to their resource data via this tool.



To retrieve water right information for a specific person or company, land description, or stream, the Montana DNRC Water Rights site will be most applicable. For example, this site can find all water rights held by a single individual often by simply asking for water rights by name. However, using multiple references can make the research more efficient. An index of identified rights, as well as an abstract of a water right, can be developed online. A mapping tool is provided that will display the water right's general location. Topographic map backgrounds and, in many instances, digital orthophotos can be used as the map's backdrop.



The Montana Thematic Mapper is best suited to find water rights within a defined geographic area. For example, this tool is suited for locating all wells within a given township, or all water right

 Quick Index to Interactive Applications Natural Information Wetland Information			
Application (Link to entry)	Description	Click Out For Detailed Help	Click Out For More Data
GENERAL INFORMATION			
 Montana Thematic Mapper	How Thematic Mapper mapping tool for accessing to provide variety of information about Montana's counties, streams, towns, and watersheds.		
 Topographic	Access Montana's 1:50,000 topographic maps and automatically zoom to any point based on latitude/longitude, township/range/section, place name, or geographic name. Topographic products available in several formats.		
 Water Rights	Query, Report, and Map DNRC Water Right Data		

diversions along a stream course within a basin or county.

The Thematic Mapper relies heavily on mapping features to deliver requested information. This tool also provides the option to map and conduct limited comparisons of water rights and several other natural resources and geographic data sets. A number of products can be developed from this site. Again, several water right index formats are available as are abstracts of individual water rights.

Data extracted and sorted through this tool are also transportable as a shape file into Geographic Information System (GIS) software and spreadsheet programs such as Excel. A map developed with this interactive mapping system can be exported and printed as a high quality graphic.

The website provides several online help tools, and you are encouraged to examine these. Although fairly intuitive, using the help tools should improve the users' skills fairly quickly.

Although this is a GIS product, it is also important to note that the points and areas displayed are “mathematically” derived. DNRC does not currently maintain a true shape file data set for each water right.

A conversion program calculates GIS point data using tabular lists of land descriptions. Point data are generated for all points of diversion, wells, reservoir locations, and places of use. For irrigation places of use, the area (acres irrigated) associated with the land description allows for the creation of a polygon representing the irrigated field. One must remember that these are only the approximate locations of the described features. 💧

THE LITIGATION AND NEGOTIATION OF THE CONFEDERATED SALISH AND KOOTENAI TRIBES' RESERVED WATER RIGHT

By Kurt Hafferman, DNRC

The Confederated Salish and Kootenai Tribes have long been involved in litigation with the State of Montana over administration of water rights within the boundaries of the Flathead Indian Reservation. The United States Supreme Court and the Montana Supreme Court have upheld the authority of the State to adjudicate all federal reserved rights. The State's assertion of authority to implement the permit and change of authorization provisions of the Montana Water Use Act has not been as successful. The decisions by the Montana Supreme Court about permit and change authorization provisions have had profound impacts on the way the Kalispell DNRC Water Resources Regional Office handles water right issues on the reservation and how growth and development can occur within the boundaries of the reservation.

The first noteworthy case is In the Matter of the Application for Beneficial Water Use Permit Nos. 66459-76L, Ciotti; 64988-G76L, Starnier; and Application for Change of Appropriation Water Right No. G15152-S76L, Pope, 278 Mont. 50 (1996) (hereinafter "Ciotti"). In Ciotti, the Court held that the Department of Natural Resources and Conservation could not issue permits within the exterior boundaries of the Flathead Indian Reservation because the criteria in law could not be met until the federal Indian reserved rights were quantified. The Montana Legislature passed legislation negating the Ciotti decision.

The legislation resulted in another important case. In Confederated Salish and Kootenai Tribes v. Bud Clinch, Director, and Montana Department of Natural Resources and Conservation, and the State of Montana, 97-609 (decided Dec. 30, 1999), 297 Mont. 448 (1999), (hereinafter "Clinch"), the Montana Supreme Court held that, even with the legislature's amendments, DNRC cannot determine whether water is "legally available" on the Flathead Indian Reservation until the Tribes' rights are quantified. Because the federal Indian reserved water rights of the Tribes are currently not quantified, the Court ordered that the Department of Natural Resources and Conservation could not issue further water use permits on the Flathead



Indian Reservation. The Court limited its order to water use permits and did not address changes in appropriation rights.

Following the Montana Supreme Court's decision in Clinch, at the request of Senator Mike Taylor of Proctor, Governor Racicot conducted two public meetings in Polson and Ronan on February 16, 2000, concerning the State's interpretation of the Clinch decision. In these meetings Governor Racicot explained which water development activities the State believed it continued to have statutory authority to manage under the Montana Water Use Act, and which were not enjoined by the Montana Supreme Court in Clinch. The activities included:

1. Changes in appropriation rights;
2. Groundwater development by means of a well or developed spring with a maximum appropriation of 35 gallons a minute or less, not to exceed 10 acre-feet a year, and that is not combined with any other well or developed spring that in combination would exceed the stated limits;
3. Groundwater development by means of a well or developed spring first put to beneficial use between January 1, 1962, and July 1, 1973, for which the appropriator did not file a notice of completion with the county clerk and recorder as required by laws in force prior to April 14, 1981;
4. Temporary emergency water appropriations from any source, for which no permit is required, e.g., water used to put out a fire;
5. Groundwater developments for groundwater that has no hydrological relationship to the surface supply, i.e. non-tributary groundwater.

In accord with the statements made by the governor, the Kalispell office engaged in limited water-resource-management-related activities within the exterior boundaries of the Flathead Indian Reservation. There have been essentially

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ENTIRE STATE DESIGNATED A DROUGHT DISASTER AREA

By Jesse Aber, DNRC

On Thursday, March 28, U. S. Secretary of Agriculture Ann Veneman announced a statewide Natural Disaster Designation (NDD) for Montana. The secretary made the announcement a highlight of her visit to Missoula and Bozeman. This will be the third consecutive year that the U. S. Department of Agriculture (USDA) has agreed to designate the entire state a natural disaster due to drought conditions.

This year's statewide NDD was granted two months earlier than the NDD for 2001. Governor Judy Martz had visited with Secretary Veneman several weeks ago in Washington, D.C., and took the opportunity to impress upon her the magnitude of impacts to Montana from its continuing drought.

"It is highly unusual that she (Secretary Veneman) would do this so early," said Ralph Peck, Director of the Montana Department of Agriculture. "I think the continuation of the drought makes it critical," Peck said. The statewide



Wind-eroded soils fill roadside ditches in a scene reminiscent of the 1930s. Toole County, April 2002

- Photo by Mike Waite, Staff, U.S. Rep. Denny Reberg

NDD for Montana in 2000 came as persistent drought gave way to a summer plague of wildfires across the state.

The NDD provides a number of benefits to drought-impacted agricultural producers and the

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(Coal Bed Methane continued from Page 1)


the surface under very low pressure (a few pounds per square inch). The quantity of water produced from a CBM field is much greater than is produced from a conventional natural gas field.

Extraction of CBM is a relatively simple but intensive process. Coal seams generally are less permeable than conventional natural gas reservoirs and are under much lower pressure. As a result, CBM wells are drilled much closer together than conventional natural gas wells. Continuous pumping of this network of wells will lower water pressure in coal seams, potentially for miles around CBM fields. These same coal seams are important aquifers that are the sources of water for numerous wells and springs used

for stock watering and domestic purposes. Reductions in water levels in wells and in flows to springs could be significant and persist even after all the methane is extracted.

The PRBCGA is intended to help protect existing water users from water level declines that could result from CBM development. The PRBCGA requires CBM operators to monitor water withdrawals and hydrologic impacts and mitigate impacts to existing beneficial uses caused by CBM development. CBM operators must describe existing hydrologic resources, submit a monitoring and evaluation plan, and provide notice and water mitigation agreements to all water right holders within one-half mile of a CBM field in their

application to the Montana Board of Oil and Gas Conservation (MBOGC) for well spacing and field rules.

A Technical Advisory Committee (TAC) administered by the DNRC Water Management Bureau makes recommendations to the MBOGC on monitoring and mitigation of impacts to groundwater resources resulting from CBM development. The TAC oversees groundwater monitoring and reporting requirements specified in the PRBCGA and reviews groundwater data and scientific evidence related to the PRBCGA. In addition, the TAC developed a regional monitoring plan intended to address potential impacts to water levels and springs miles away from CBM fields. 

(Litigation and Negotiation continued from Page 3)

three noteworthy activities. Two involve change of use authorizations (City of Polson and Axe), and one involves the development of groundwater with no hydrological connection to the surface flows of the reservation (Lang).

In the City of Polson application, the Kalispell office processed and authorized a change application for a point of diversion change submitted for a municipal supply well. In this case, the Tribes took no legal action even after the change authorization was issued and the change put into service.

The Kalispell office processed another change application (Axe) that sought to change the use of a surface water irrigation right to a recreational use right. After a public notice period during which several local landowners, the Tribes and the U.S. Bureau of Indian Affairs objected, and just prior to the commencement of the administrative hearing, the Tribes sought a preliminary injunction in State district court (First Judicial District, Lewis and Clark County, Judge Sherlock). Legal arguments were heard on February 27, 2002, and the matter is pending.

Finally, the department processed an application (Lang) for a new water use permit seeking to develop a non-tributary, 1,000-foot-deep water well from a bedrock aquifer for a planned water bottling plant. After conducting a hearing on the application, the department issued proposed findings of fact and conclusions of law that would allow for the granting of the permit. The department made a motion in the Montana Supreme Court to allow the Lang permit to be processed to completion. The Supreme Court declined, stating that it would need a factual record upon which to proceed. The department then issued a final order to allow for a factual record to come before the Montana Supreme Court.

The Tribes filed a new matter before the Montana Supreme Court, asking it to take jurisdiction to prevent the department from going forward with the final order; seeking to hold the Department's director, Water Resources Division administrator, chief legal counsel, and two senior staff attorneys in contempt of court; and alleging that the department and the named government officials violated the Supreme Court's Clinch injunctive order. The

Montana Supreme Court heard oral arguments on November 13, 2001, and a decision is pending.

A ruling against the Department could create a regulatory vacuum on the Reservation in which neither the State nor the Tribes could issue water rights from any source of water within the exterior boundaries of the Flathead Indian Reservation. Even now, all the Kalispell office can do is advise that persons or entities seeking water rights should contact their legal counsels before proceeding with any water-related development plans.

Currently, the Kalispell office has about 50 groundwater development certificates that have been processed but not issued, and there is one groundwater permit, other than Lang, that is pending. Interestingly, there have not been any other permit applications since Clinch. When the Kalispell office is answering questions about water right applications, applicants are advised that they can still submit any type of application, but that the Kalispell office is not processing any files and will not issue any authorizations, permits, or certificates until otherwise directed by the department.

Because of the State's position on the processing of new water right applications and the uncertainty about when the courts might decide the Lang and Axe cases, the Lake County Commissioners have conditioned preliminary plat and subdivision approvals where water rights have not been quantified. This county decision, coupled with the decisions of the Montana Supreme Court, have created a new and distressing concern over the long-term impacts to development, real estate sales, land values, and the general economy of Lake County.

(Continued on back page)

MONTANA WATER TRIVIA

Which lake was created when a catastrophic earthquake dammed the Madison River?

Answer: Quake Lake

(Drought continued from Page 4)

businesses that support agriculture.

First, the NDD opens the low-interest Emergency Loan Program of the federal Farm Service Agency (FSA). For the first time in 15 years, new rules will allow affected producers to apply for loans for up to 100 percent of the production losses documented. Prior to this, producers were limited to applying for loans for up to 80 percent of the documented losses from

drought. Affected producers will have up to eight months to apply for loans to cover documented losses.

And, according to the secretary, the program's new rules make it easier and quicker for farmers who suffered losses from the drought to get federal loans. Loan approval will be based on the extent of a farmer's losses and the ability to repay the loans. Applications to the emergency loan program will now be processed by local FSA officials.

Second, the NDD triggers Internal Revenue Service income tax allowances for deferring capital gains, for example, on the forced early sale of livestock due to drought conditions causing problems with low feed, forage, or water. The gains can be deferred to the next year and perhaps longer if the drought is prolonged and a subsequent NDD is granted.

Third, the NDD activates the Small Business Administration (SBA) low-interest Emergency Loan Program for businesses suffering from loss of normal business volume from impacts that are related to the drought because the business is agriculturally oriented. It should be noted that businesses impacted by fire or indirectly affected by drought are not often eligible for the SBA program. Interested parties can call the SBA at 800-827-5722 for more information.

Finally, the most significant benefit the NDD may provide for 2002 is adding momentum to the

passage of the disaster payment amendment to the Farm Bill. The Montana Governor's Drought Advisory Committee recently sent correspondence to each one of the committee conferees, stressing how critical the \$2.4 billion natural disaster assistance is to Montana farmers, ranchers, tribes, and agri-businesses. U. S. Representative Dennis

Rehberg was quoted as saying, "(The NDD) gives us an opportunity to go back to

the (Senate-House Conference Committee) conferees on the (pending) Farm Bill and say, 'See, we were telling the truth. We really do have a drought back here (in Montana)'."

For weeks, Montana's entire Congressional delegation has been working hard to make the case

for the disaster payment amendment to the Farm Bill, which is being hotly debated in Congress. Senator Conrad Burns, R-Mont., called the (NDD) action welcome and significant. "We needed the (NDD) designation to break money loose for disaster relief," said Burns, who traveled through the state with Veneman. Senator Max Baucus, D-Mont., who was also present for the announcement, called the designation a "major boost."

With the statewide NDD announcement, the presumption is that a Montana county is most likely in drought, and the time-consuming standard petition process, with its multi-level review, is not required. Producers that apply will most likely get low-interest loans as long as the losses are documented and can be confirmed on a case-by-case basis by local FSA officials. And they cannot borrow elsewhere. For now, however, most producers are not interested in borrowing more money, their hopes are riding on the Farm Bill's disaster payment amendment. For more information visit <http://www.nris.state.mt.us/drought/>. 💧

DROUGHT



The topsoil stripped away by high winds, root wads of plants are exposed to die, resulting in long-term damage to the viability of range lands.

Toole County, April 2002 - Photo by Mike Waite, Staff, U.S. Rep. Denny Rehberg

"MONTANA WATER LEGEND" RON SHIELDS RETIRES FROM USGS

By *Cindy Forgey*

Ron Shields graduated from Penn State University in 1961 with a Bachelor of Science degree in Forestry. From 1961 to 1965 he served as an Army officer with the 25th Infantry Division. In 1965, he resigned from the Army as a captain and attended graduate school at Penn State, graduating in September of 1966 with a Master of Science Degree in Forest Hydrology. He began working for the Water Resources Division of the U.S. Geological Survey (USGS) in Albany, New York. While there, he worked as a project hydrologist on several major river basin studies throughout New York. In April 1969 he transferred to the USGS District Office in Helena.

While working in Helena, he was involved in the collection, compilation, and publication of streamflow and water quality data. Ron served in several supervisory roles, from 1972 to 1979 as Helena Sub-District chief and from 1979 until his retirement in January 2002 as the Montana District hydrologic data chief. Over the past 30 years in the Montana District he worked closely with various state, federal, and watershed groups in monitoring and reporting on the state's surface water resource. One of the more practical accomplishments has been the development of the USGS's "Realtime Data" streamflow page on the Internet. Water users and recreationists now have access to information on over 150 rivers in

the state. This information can be found at <http://montana.usgs.gov/>.

In 1998, Ron was recognized as a "Montana Water Legend" by the Montana Section of the American Water Resources Association for his dedication and service to the people of Montana.

When asked what he felt was the most challenging water quality issue facing Montanans today, Ron said that it would be

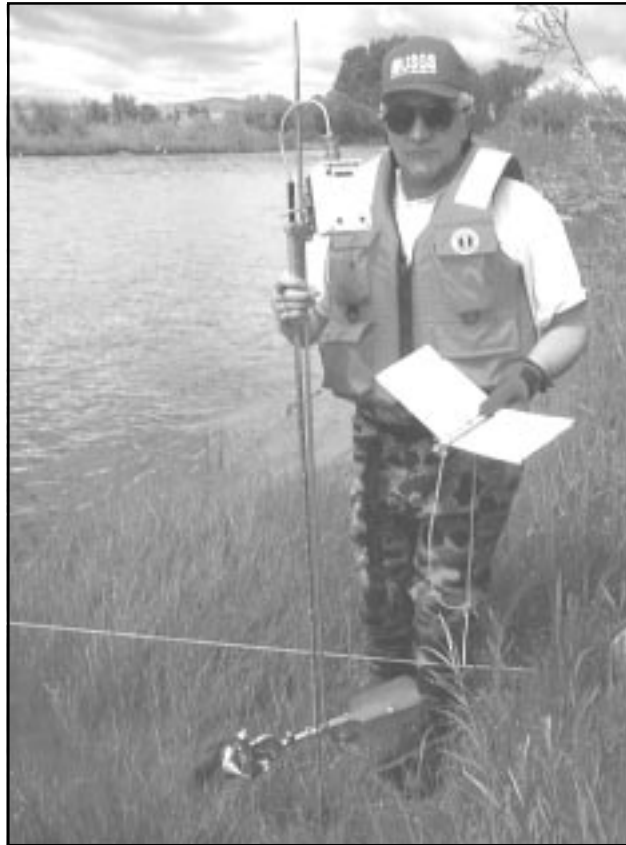
Ron thinks that the most important water quantity issue facing Montanans would have to be the lack of both precipitation and surface water runoff as the result of the continuing drought. Many streams and rivers are currently flowing at near record low levels, and most reservoirs are below normal storage for the upcoming season. This presents a definite challenge for water

managers, irrigators, and recreationists to share what may be a very limited supply this summer.

Water-related issues in the next 10 years will undoubtedly be based around instream flows, water (both surface and groundwater) availability and development for urban sprawl, and conflicts between water users. One of the strong points of recent stewardship of the state's water resources has been local citizen watershed groups that have sprung up in various basins throughout Montana. These groups, made up of local folks, have been instrumental in providing a balance of practical water management and stewardship of the water resources of their

respective basins.

Ron lives in the Helena valley with his wife Addie. His plans for retirement are to volunteer with the USGS, Trout Unlimited and go fishing. Good luck, Ron, on your retirement. 💧



Ron Shields

implementation of the Total Maximum Daily Load (TMDL) Program in the time frame ordered by the Court. Compiling a scientifically defensible database of stream contaminants and water quality parameters is going to be a challenge both in the limited time frame and the funding available for the TMDL Program.

(Litigation and Negotiation continued from Page 5)

At the same time that the litigation has advanced, the negotiations of the Tribes' federal Indian reserved and aboriginal water right claims have also resumed with the Reserved Water Rights Compact Commission. The State, federal government, and the Tribes have had three negotiating sessions within the last two years. In June 2001, the Tribes issued a proposal setting forth how the Tribes believed the federal Indian reserved water rights claims should be resolved. The proposal is available on the compact commission's website at <http://www.dnrc.state.mt.us/rwrc/index.htm>. In the proposal, along with other statements, the Tribes concluded that their water rights are contained in a "unitary system" that includes both surface water and groundwater

and that these rights are "pervasive." In the proposal, the Tribes suggested that they should have sole jurisdiction over all water rights, Tribal and State-based, within the boundaries of the reservation.

The proposal raised many concerns, and, at the third negotiating session in February of this year, the Tribes' proposal was set aside as a working document. The Tribes and the State have agreed to form three working groups: a technical group to look at hydrology, an interim permitting and administration process group, and a claims examination group.

The interim permitting group, which was subject to and approved by the Tribal Council, is moving forward. Representatives of the Tribes, State, and the federal

government are currently meeting to discuss an interim permitting and administration process with the goal of agreeing on a system of administering water rights permitting and changes during the time that negotiations are proceeding. Without an interim agreement, water-related development within the boundaries of the Reservation would be minimal, or nonexistent, until the adjudication or settlement of the Tribes' federal reserved rights is completed.

The State is estimating that the effort to negotiate and quantify the Tribes' reserved water right may take as little as 5 and as many as 10 years. It is possible that the whole quantification process may be as long as 15 years. Needless to say, local concern is high. 💧



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1,600 copies of this document were published at a total cost of \$805.60 which includes \$460.00 for printing and \$345.60 for distribution.

**MONTANA DEPARTMENT OF NATURAL
RESOURCES AND CONSERVATION
WATER RESOURCES DIVISION**
48 North Last Chance Gulch
P. O. Box 201601
Helena MT, 59620-1601

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